EPI-LOG

Communicable Disease and Epidemiology News
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Public Health Practice at Ground Zero: Lessons Learned

Dr. Marcelle Layton, the assistant commissioner for Communicable Diseases for the New York City Department of Health (NYCDOH), was a featured speaker at the Institute for Public Health Practice sponsored by the Northwest Center for Public Health Practice at the University of Washington on September 13th. Dr. Layton highlighted the lessons learned as New York City responded both to the attacks on the World Trade Center on 9/11, and the subsequent cases of anthrax. The following, is a summary of Dr. Layton's presentation:

Post-9/11 Communicable Disease Surveillance Activities

On 9/12, New York City began active syndromic surveillance for clusters of disease or unusual disease manifestations at 15 sentinel emergency departments (EDs) in New York City. Members of the Centers For Disease Control and Prevention's (CDC's) Epidemic Intelligence Service staffed each hospital ED around the clock and made sure that clinicians completed a form indicating the diagnosis of each patient that was seen. This data was entered into a centralized database and was analyzed twice daily in order to identify any unusual disease patterns. Once the the first anthrax case was identified in Florida on October 4th, the NYCDOH surveillance system was modified to include inhalational anthrax, and outreach to all intensive care units, microbiology labs, infection control practitioners, and infectious disease physicians was initiated. It soon became apparent that dermatologists were a key missing component of that list.

Activities After the First Anthrax Case (Cutaneous) Was Identified

After the initial cutaneous anthrax case was identified, active surveillance for other cases, and for suspicious letters began. The surveillance system was modified in order to pick up cutaneous anthrax. Outreach was targeted to dermatologists, and a dermatology referral system was set up using digital cameras. The ED surveillance was expanded to 29 hospitals, and NYCDOH began working with employee health services and the veterinary community. By November 11th, seven cases of cutaneous anthrax, and one fatal case of inhalational anthrax had been diagnosed in New York City.

The main lessons learned in New York City by Dr. Layton and her colleagues were that:

(1) **Reporting by health care providers is the key to identifying and characterizing outbreaks**. Because there were so few cases of anthrax in NYC, it is unlikely that they would have been identified by the emergency department based syndromic surveillance system.

(2) Representatives from a wide variety of health disciplines, including dermatologists and veterinarians, need to be incorporated into bioterrorism preparedness activities.

Fatal Dengue Hemorrhagic Fever in an Hispanic Male

After returning from a month-long visit to the Acapulco area of Mexico, a 32 year-old, previously healthy, Hispanic male presented to the emergency department with nausea and vomiting, right upper abdominal pain, myalgias and difficulty breathing. He also reported a several day history of fever, headache, dental pain and nosebleeds, with some episodes of diarrhea without gross blood. He self-treated these symptoms by taking ibuprofen and acetaminophen. The decedent, who had lived in the United States for the last ten years, stayed at a guest ranch with family members during his visit. His family reported that he was bitten many times by mosquitoes, but they were not aware of any rash, swollen joints, or skin changes.

At initial presentation to the emergency room, the patient's blood pressures were labile, responding to IV fluids and then dropping. A computed tomography (CT) scan of the head did not show bleeding or acute disease, the chest X-ray was clear, and an electrocardiogram showed sinus tachycardia

with no acute abnormalities. A chest CT scan showed some ascitic fluid and mild pericardial effusion. Laboratory results were markedly abnormal, including elevated creatinine, anemia, low platelet count, and elevated liver function tests. The patient became progressively hypotensive, started developing mental status changes, and subsequently had a seizure and died.

An autopsy revealed generalized edema throughout the patient's tissues with splenomegaly. The liver was within normal limits and there was no pulmonary embolism. Tissue samples were sent to the Centers for Disease Control and Prevention (CDC) for immunohistochemistry, which was strongly suggestive of infection with dengue virus. Serology results are pending.

Dengue virus is a flavivirus with four antigenically distinct serotypes. Previous infection with a different dengue serotype is the most important risk factor for dengue hemorrhagic fever (DHF), therefore, this manifestation is more common among those who live in areas of endemic disease than among travelers. This particular traveler may have been at increased risk for DHF because he resided in Mexico during his childhood.

Although dengue virus is unlikely to be used as an agent of bioterrorism, clinicians should be aware that the occurance of viral hemorrhagic fever syndromes among their patients may signify a potential bioterrorism event. The CDC classifies several viral hemorrhagic fever viruses, including Lassa virus, Marburg virus, and Ebola virus, as agents of highest concern for their potential to be used as bioterrorist weapons.

Any disease of suspected bioterrorism origin is immediately notifiable in Washington State. In addition, any critical illness or death in a previously healthy person, that is unexplained after initial testing, is also immediately notifiable. In King County, please report any condition that is immediately notifiable by calling (206) 296-4774, day or night. Please see the complete list of notifiable communicable diseases and related conditions at: http://www.metrokc.gov/health/providers/cdconditions.pdf

Preparing and Responding to Bioterrorism: Training for Primary Care Clinicians

The Northwest Center for Public Health Practice and the Communicable Disease Epidemiology and Immunization Section of Public Health-Seattle & King County has developed a training program for primary care clinicians on preparing and responding to bioterrorism. This curriculum is divided into four major sections:

1. Introduction to Bioterrorism,
2. Bioterrorism Preparedness and Response,
3. Diseases of Bioterrorist Potential, and
4. Psychological Aftermath of Crisis.

The seven slide sets and accompanying instructor's manuals (four slide sets comprise the Diseases of Bioterrorist Potential section) are designed for the training and education of primary care clinicians. These materials can be found at: http://healthlinks.washington.edu/nwcphp/bttrain/clinicians.html

Disease Reporting

AIDS/HIV ..... (206) 296-4645
STDs ..... (206) 731-3954
TB ..... (206) 731-4579
Other Communicable Diseases ..... (206) 296-4774
Automated 24-hr reporting line for conditions not immediately notifiable ..... (206) 296-4782

Hotlines:

Communicable Disease ..... (206) 296-4949
HIV/STD ..... (206) 205-STDS

***EPI-LOG* Online (including past issues):**
www.metrokc.gov/health/providers

Reported Cases of Selected Diseases, Seattle & King County 2002

	Cases Reported in August		Cases Reported through August	
	2002	2001	2002	2001
AIDS	13	20	189	227
Campylobacteriosis	27	35	211	214
Cryptosporidiosis	4	2	12	15
Chlamydial infections	335	392	2837	2825
Enterohemorrhagic *E. coli* (non-O157)	0	0	0	3
***E. coli* O157: H7**	8	8	16	21
Giardiasis	17	15	125	92
Gonorrhea	100	176	937	1046
***Haemophilus influenzae* (cases <6 years of age)**	0	0	0	0
Hepatitis A	1	3	25	14
Hepatitis B (acute)	3	1	20	25
Hepatitis B (chronic)	49	74	343	381
Hepatitis C (acute)	1	0	9	8
Hepatitis C (chronic, confirmed/probable)	107	128	1050	970
Hepatitis C (chronic, possible)	38	67	342	375
Herpes, genital	48	42	443	481
Measles	0	0	0	12
Meningococcal Disease	0	0	15	6
Mumps	0	0	0	1
Pertussis	16	7	80	24
Rubella	0	0	2	0
Rubella, congenital	0	0	0	0
Salmonellosis	23	35	141	183
Shigellosis	9	12	41	73
Syphilis	8	5	29	39
Syphilis, congenital	0	0	0	0
Syphilis, late	1	4	24	30
Tuberculosis	12	8	99	90

The *Epi-Log* is available in alternate formats upon request.